

SOME BRACONID AND CHALCID FLIES FROM FORMOSA PARASITIC ON APHIDS

By A. B. GAIHAN,

Of the Bureau of Entomology, United States Department of Agriculture

The material upon which the following notes and descriptions are based was sent to the United States Department of Agriculture for identification by T. Shiraki, of Taihoku, Formosa. Very little information occurs in the literature concerning the parasites of plant lice from this region, and it is, therefore, a pleasure to be able to make this small contribution toward such knowledge. The following records are especially valuable because in every instance the material was reared and is accompanied by a definite host record.

Superfamily ICHNEUMONOIDEA

Family BRACONIDAE

Subfamily APHIDIINAE

APHIDIUS ERVI Haliday

Four specimens which appear to be this species were reared from *Macrosiphum*, species on *Rubus* at Taihoku, Formosa, by R. Takahashi, December 2, 1923.

APHIDIUS UNILACHNI, new species

Differs from all other species known to the writer by the very slender and slightly upturned ovipositor sheaths.

Female.—Length 2.2 mm. Smooth and shining, the first tergite very weakly rugulose. Head transverse, a little broader than the thorax, distinctly narrowed behind the eyes; eyes very slightly converging anteriorly; distance from antennae to apex of clypeus nearly equal to shortest distance between the eyes; palpi short; antennae 16-jointed, the third joint approximately twice as long as thick and the following joints, except the last, of about the same length as the third, last joint nearly twice as long as the third;

notauli absent except at anterior angles of mesonotum; propodeum smooth, sharply declivous behind, the dorsal portion with a very delicate median longitudinal carina, the posterior face with a very broad median area and on each side at the posterior lateral angles a much smaller area; wings normal for the genus, the first abscissa of radius a little less than twice as long as the second abscissa, which is slightly longer than the intercubitus, discocubital vein complete; brachial cell complete; abdomen one and one-half times as long as the head and thorax, slender, tapering toward apex; first tergite slightly broader at apex than at base; ovipositor sheaths very slender, tapering to a point at apex, and distinctly curved upward. Head and thorax brownish black; mandibles, palpi, sides of pronotum, legs including coxae, first tergite, basal half of second tergite, more or less of third tergite and the apex of abdomen brownish yellow; antennae uniformly blackish; abdomen, except as indicated, fuscous; wings hyaline, the veins and stigma pale yellowish.

Male.—Length 1.8 mm. Antennae 19-jointed, the flagellar joints all subequal and about twice as long as thick, the apical one very slightly longer than the preceding one; second abscissa of radius subequal to the transverse cubitus and half as long as first abscissa. Head, thorax, abdomen, and antennae nearly uniformly brownish black, the first tergite at base somewhat paler; legs dark brownish testaceous. Other characters as in the female.

Type locality.—Taihoku, Formosa.

Type.—Cat. No. 28983, U.S.N.M.

Host.—*Unilachnus*, species.

Two females and one male received from T. Shiraki and said to have been reared from the above aphid on *Pinus* by R. Takahashi, October 22, 1923.

APHIDIUS, species

Five specimens of a species of *Aphidius* reared from *Macrosiphum neoartemisiae* Takahashi in March, 1923, at Taihoku, Formosa, by R. Takahashi, are in too poor condition for positive determination. This is a small, brownish testaceous species superficially resembling *Lysiphlebus japonicus* Ashmead but distinguishable by the complete discobital nervure and the more completely areolated propodeum.

APHIDIUS LATICEPS, new species

Resembles *A. pinaphidis* Ashmead, but the mesoscutum is less strongly sculptured, the wing stigma is more triangular, and the ovipositor sheaths are broader and shorter.

Female.—Length 3.8 mm. Head smooth, viewed from above broader than the thorax, fully twice as broad as long; viewed from

in front the head is obviously broader than high; eyes large and prominent, nearly circular, sparsely hairy; face twice as broad as high; palpi short; antennae broken, the first flagellar joint about two and one-half times as long as thick, following joints shorter; mesoscutum faintly alutaceous and subopaque, with a few obscure wrinkles following the subobsolete notauli, the anterior one-third with some distinct rugosities or subobsolete punctures; propodeum nearly smooth above but with its posterior face and lateral margins distinctly rugulose, the petiolar area concave, much broader than long and more or less transversely wrinkled within; the lateral areas of posterior face of propodeum small and mostly restricted to the lateral angles; pleura smooth; legs normal; stigma of forewing short and broad, emitting the radius at the middle; metacarpus distinctly longer than the stigma; radius short, somewhat thickened basally, its first abscissa less than twice as long as the stub of second, which is a little longer than the intercubitus; brachial cell closed; abdomen one and one-half times as long as the thorax, the first tergite rugose, twice as broad at apex as at base; ovipositor sheaths rather broad and short. General color reddish testaceous; metanotum, propodeum, apical half or more of third, fourth, and fifth and all of following abdominal segments dark brownish to blackish; scape and pedicel testaceous, flagellum blackish; legs concolorous with thorax, the posterior femora and tibiae suffused with brownish; wings hyaline; venation brownish, the costal and basal veins darker than the others, and the median and submedian veins mostly pale; stigma at base and narrowly along the anterior margin pale, otherwise brownish.

Male unknown.

Type locality.—Taihoku, Formosa.

Type.—Cat. No. 28984, U.S.N.M.

Host.—*Dilachnus*, species.

One female received from T. Shiraki and said to have been parasitic upon an unidentified species of *Dilachnus*, collected by R. Takahashi. The type has lost one pair of wings and both antennae are broken.

APHIDIUS COMMODUS, new species

This species agrees very closely with the description of *pseudoplatani* Marshall except that the palpi are not unusually long and the ovipositor sheath is not curved downward at apex. Structurally it is very similar to *colemanni* Viereck but may be readily distinguished by its yellowish color.

Female.—Length 2.5 mm. Smooth and shining, the first tergite weakly rugulose. Head transverse, as broad as the thorax, narrowed behind the eyes; eyes converging below; distance from antennal fossae to apex of clypeus a little greater than the shortest distance

between the eyes; palpi normal, not elongate; antennae 16-jointed, approximately two-thirds as long as the body, the third joint (first flagellar joint) nearly four times as long as thick, following joints shorter, the fifteenth about twice as long as broad, the sixteenth longer than the third and nearly twice as long as the fifteenth; notauli effaced except at the anterior angles of mesonotum; propodeum smooth and distinctly areolated, the petiolar area very narrow, a little broader anteriorly than posteriorly; wings normal, the first abscissa of radius about twice as long as the stub of second, which is subequal to the intercubitus; brachial cell complete; abdomen one and one-half times the head and thorax in length, the first tergite a little broader at apex than at base, a little more than twice as long as broad at apex, and weakly rugulose; ovipositor sheaths normal. General color reddish testaceous, the propodeum and second and third abdominal segments suffused with brownish; legs concolorous with the thorax but with the middle and hind femora, the hind tibiae, and all tarsi more or less tinged with brownish; antennal scape and pedicel testaceous, the flagellum brownish black; wings hyaline, basal vein and costal vein toward apex brownish, stigma and remaining veins pale; ovipositor sheaths blackish.

Male.—Length 1.75 mm. Antennae 18-jointed, the apical joint small and shorter than the preceding, the third joint the longest and about three times as long as thick; face very slightly shorter than the shortest distance between the eyes; head above and dorsum of thorax dark brown, approaching piceous; abdomen, except first segment fuscous; hind legs mostly dark brownish. Otherwise agrees with female.

Type locality.—Taihoku, Formosa.

Type.—Cat. No. 28985, U.S.N.M.

Host.—*Macrosiphoniella formosartemisiae* Takahashi.

Four females and one male received by the Bureau of Entomology from T. Shiraki and said to have been reared from the above-mentioned aphid April 20, 1922, by R. Takahashi.

TRIOXYS COMMUNIS, new species

Easily distinguished from *struma* by the absence of toothlike elevations on the pronotum and by its darker color. Resembles the American species *ovalis* Provancher but differs by having the ovipositor sheaths a little longer and the color of legs a little more obscure. Also similar to *aceris* Haliday, differing chiefly in the darker color of thorax and abdomen.

Female.—Length 1.2 mm. Smooth and shining. Head viewed from above about twice as broad as long; viewed from in front a little broader than high; vertex arched; eyes slightly converging

anteriorly; antennae inserted on middle of head and not distinctly above middle of eyes, 11-jointed, approximately two-thirds as long as the body, scape barely longer than broad, pedicel globose, flagellar joints about two and one-half times as long as thick, except the last, which is about equal to the two preceding joints together; pronotum normal, without a conspicuous elevated area medially and without toothlike projections laterally, but usually with a very inconspicuous fovea or weak longitudinal fold on each side near the middle; notauli weakly impressed at the lateral anterior angles of the mesonotum, entirely effaced on the dorsum; propodeum completely but very delicately areolated and its posterior face very faintly rugulose; abdomen about one and one-third times the length of head and thorax, smooth, the first tergite rather narrow with a slight constriction between middle and apex, the spiracles at the middle and not prominent; anal prongs distinctly longer than the first tergite; ovipositor sheaths approximately half as long as the anal prongs, very nearly as broad at apex as at base, and only slightly curved; wings normal, the radius extending a little more than halfway to the wing margin; first brachial cell mostly effaced. Head and thorax black; scape, pedicel, two or three basal joints of flagellum, and the mouth pale yellowish; collar and propodeum usually somewhat piceous; legs fusco-testaceous; first segment of abdomen pale, remainder of abdomen, including the anal prongs and ovipositor sheath, brownish black; wings hyaline, stigma and radius pale; basal vein dark.

Male.—Length 1.1 mm. Antennae 13-jointed; legs usually a little more strongly infuscated than in the female. Otherwise agrees with female.

Type locality.—Taihoku, Formosa.

Type.—Cat. No. 28987, U.S.N.M.

Host.—*Aphis gossypii* Glover.

Two females and four males received from T. Shiraki, reared August 30, 1922, by R. Takahashi.

TRIOXYS STRUMA, new species

This species may be distinguished at once from all others known to the writer by the presence on the middle of the pronotum or collar of an elevated area which is broader than long and nearly flat above, with its lateral anterior angles prominent, in lateral view appearing as a blunt tooth on each side of the pronotum.

Female.—Length 2.6 mm. Smooth and polished. Head, viewed from above, transverse; viewed from in front slightly broader than high, the vertex strongly arched above the eyes; eyes slightly converging below; antennae inserted about on middle of head but

somewhat above middle of eyes, 11-jointed and about two-thirds the length of body; scape somewhat longer than broad, pedicel nearly globose; joints 3 to 10 of antennae subequal and each about three times as long as thick, joint 11 distinctly the longest; pronotum as indicated above, the elevated area broader anteriorly than posteriorly and divided by a weak median longitudinal carina; notauli impressed at the lateral anterior angles of mesonotum, mostly effaced above but traceable as darker lines on mesonotum; propodeum smooth, distinctly areolated, the petiolar area pentangular and nearly as broad as long; abdomen smooth, one and one-third times as long as the head and thorax; first segment rather slender and nearly parallel-sided but with a distinct constriction at apex, the spiracles placed distinctly before the middle and not prominent; hornlike processes at apex of abdomen as long as the first tergite, the ovipositor sheath curved downward and moderately slender. Wings normal for the genus, the radius inclosing a little more than half the radial cell; first brachial cell complete. Pale testaceous; the antennae beyond the third joint, a band on abdomen embracing the apex of second and all of third tergite, the ovipositor sheath, and the apical joint of all tarsi brownish black; wings hyaline, the stigma whitish, veins mostly brownish, costa basally, and medius and submedius paler.

Male.—Length 2 mm. Antennae 13-jointed, as long as the body or nearly, the apical joint no longer than the preceding. Head and thorax above brownish yellow, beneath paler; scape and pedicel yellow, the rest of antennae black; abdomen mostly brownish black, the first and large part of second tergites testaceous; legs concolorous with underside of thorax; other characters as in the female.

Type locality.—Taihoku, Formosa.

Type.—Cat. No. 28986, U.S.N.M.

Hosts.—*Macrosiphoniella citricola* Van der Gott and *Greenidea ficicola* Takahashi.

Described from two female and two male specimens received through the Bureau of Entomology from T. Shiraki. Both females and one male were reared, according to Shiraki, from *Macrosiphoniella citricola* Van der Goot by R. Takahashi. One male was reared by the same collector from *Greenidea ficicola* Takahashi.

PRAON, species

One male specimen of a Praon which apparently is very close to *P. flavinode* Haliday was reared from *Macrosiphum formosanum* Takahashi, at Taihoku, Formosa, May 5, 1922.

EPHEDRUS JAPONICUS Ashmead

A series of 11 specimens of this species were reared February 7, 1922, from *Brachysiphoniella graminis* Takahashi at Taihoku, Formosa, by R. Takahashi, and 13 specimens of the same species from *Aphis rumicis* Linnaeus in March, 1922, by the same collector.

DIAERETUS NIPPONENSIS Ashmead

Two specimens identified as this species were reared January 24, 1922, from *Greenidea ficicola* Takahashi at Taihoku, Formosa, by R. Takahashi.

LYSIPHLEBUS JAPONICUS Ashmead

Three specimens reared April 4, 1922, and two specimens reared November 18, 1922, from *Toxoptera aurantii* Boyer by R. Takahashi at Taihoku, Formosa, have been identified as this species. The national collection also possesses nine specimens of this species reared from the orange aphid, June 21, 1917, at Shidzuokaken, Japan, by R. Yoshida.

Superfamily CHALCIDOIDEA

Family PTEROMALIDAE

PACHYNEURON SIPHONOPHORAE Ashmead

Five specimens which I am unable to distinguish from this common American species were reared at Taihoku, Formosa, from *Macrosiphum formosanum*.

